&RQVWUXFWLRQ H[SUHVVLRQ DQG FKDUDFWHUL]DWLRQ RI D FDC malignancies

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Dual-function proteins are a new class of therapeutics that composed of an antibody or antibody fragment linked to a cytotoxic molecule to facilitate the targeted delivery and destruction of malignant cells. CD22 is a highly internalizing B-cell speci c surface antigen which overexpressed in 60%-80% of di erent types of B-cell malignancies. erefore, anti-CD22 antibodies are ideal candidates for targeted intracellular delivery of antitumor agents. Apoptin is a small 13KDa protein which can induce apoptosis in tumor and transformed cells but not in normal cells. Hence, the apoptin protein can be used as a toxic moiety in development of cancer -speci c fusion proteins. In this study, we generated a novel dual function protein by fusing apoptin to the C-terminus of a humanized anti CD-22 scFv; the anti-CD22 scFv portion of the protein targets the whole molecule to the tumors, while apoptin executes speci c killing functions. Using the routine molecular methods, the recombinant anti-CD22 scFv-apoptin protein was expressed in E. coli and then puri ed. e in-vitro binding analyses by immuno uorescence and ow cytometry demonstrated that the anti-CD22 scFv speci cally bind to Raji CD22 positive cells and almost not to Jurkat CD22 negative cells. Evaluation of apoptotic property of anti-CD22 scFv-apoptin using ow cytometry showed that following speci c binding of anti-CD22 scFv-apoptin, the protein induced apoptosis signi cantly in Raji cells ($p<0.05$). In conclusion, we have successfully produced functional anti-CD22 scFv-apoptin in E.coli. is recombinant protein may o er a new opportunity for the treatment of CD22+ B-cell malignancies.

Biography

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